

Hydrillula palustris (Hübner) in Lincolnshire

By R. E. M. PILCHER

Since several people have now visited the Lincolnshire coast in order to obtain a series of that normally elusive insect *Hydrillula palustris* and generally with considerable success, it may be of interest to describe the stages which have led to its discovery in a number of sites in this County.

My interest in the moth began when I was up at Cambridge and used to join my father in Wicken Fen in the days when old Barnes, the keeper, allotted one a length of drove in the fen, a number of sugaring posts, a vertical sheet and a lamp, and left one to it. We never found *palustris* but one day we joined a group of collectors who were listening with every evidence of distress to the tale of how someone the previous night had killed a female *palustris*. We knew it was a rare moth but I do not think we had appreciated the extreme rarity for we knew that twenty years previously, in 1902, a male had been taken in Lincolnshire but we did not know where.

Having the type of habitat at Wicken in mind, and later that of Woodwalton, we worked assiduously, as opportunity offered, those areas of fenland which still persisted at that time between the wars. We turned up many interesting species but no *palustris*. My father died in 1942 and when, after the war, it was possible to resume collecting again, I was joined by two younger friends who without any special interest in my quarry were only too pleased to collect the other species my father and I had discovered. No *palustris* appeared and we decided that if it occurred at all in the Lincolnshire fens, it must have a very low population density.

In 1968 I retired and left the fens to go and live in the Lincolnshire Wolds. Although I ran a Robinson trap all the following year my main occupation was the recovery of a rather neglected garden. In the winter of 1969 I reduced the height of ten foot hawthorn hedge at the bottom of my paddock to about three feet so that the following year my light trap overlooked an area of pasture and a freshwater marsh. On 20th June 1970 a male *palustris* appeared in the trap. It seemed certain that the moth had come from Calceby Beck marsh, the marsh my paddock overlooks, and in the following year, 1971, I placed two Heath traps in the marsh. On the 6th June a second male appeared. I was joined a few days later by two friends but in spite of using five traps of both Robinson and Heath varieties, no more *palustris* appeared. Calceby Beck marsh presents certain problems from the moth trapping point of view. It can only be worked with the co-operation of the farmer for he grazes rather more than a hundred bullocks in the marsh and surrounding pasture. These beasts have been hand-reared since the first few days of their existence and have nothing but extreme friendly feelings for human beings. If a man walks into the field, the beasts rush to him with every

evidence of pleasure, they crowd round him and refuse to be parted from him, following him wherever he goes. This well-meaning behaviour of the beasts makes trapping impossible unless the farmer agrees to confine the beasts to a small field while trapping is in progress. The farmer did this willingly enough for two weeks but after that the beasts were short of grazing and he had to let them out. I therefore moved to a second site about half a mile away, Swaby Beck marsh, where two male *palustris* appeared on two successive nights.

That same year, 1971, I also ran a static trap at the Gibraltar Point Nature Reserve and on the 5th June a male *palustris* appeared in it with a second specimen on 15th June. This was not as surprising as one might have imagined for the capture of my first specimen the previous year had stimulated me to make a more thorough investigation of that 1902 specimen, and as I recorded in E.R. 83, p.23, when I reported the capture of my first specimen, it had been taken by Messrs Musham and Arnold on the 21st June 1902 in the coastal sandhills at Theddlethorpe. After I had learnt of this coastal capture I had regarded Gibraltar Point Reserve as a likely habitat, rather better than Theddlethorpe, but I felt that if I was going to look for *palustris* on the coast, Saltfleetby must be the first choice. Here a marshy area of freshwater dune slacks gradually tails off at either end into dry juncus-fringed coarse grassland.

I had now in 1972 two large areas to explore, Gibraltar Nature Reserve, an area of more than 1500 acres with one area almost as likely as another to produce *palustris*, and the Theddlethorpe-Saltfleetby Nature Reserve of about 1200 acres, differing from Gibraltar Point in that one small area appeared to be so much better than any other. This seemed rather a big task for one person to achieve within the period of no more than three weeks during which *palustris* might be expected to fly. When, therefore, Bernard Skinner wrote to me and asked if he could help, I welcomed the opportunity of having someone at a site I could virtually pin-point while I worked the wide and more uncertain area of Gibraltar Point. I expected that we should have many blank nights but in the event I was very wrong. On his first night at Saltfleetby, 10th June, Skinner found *palustris* the commonest moth in his traps, some twenty-five being present in the morning. On the next night we saw only seven—how quickly one drops to the word “only” when one describes what such a short time previously would have been a record night. On the next night, 12th June, at 9.50 B.S.T. I found a male on a stem of *Agrostis* with a little *Equisetum* for several yards around. I did not stay longer at Saltfleetby that night but went on to Gibraltar Point where seven more *palustris* appeared in my trap and five more on a second visit later in the week. Meanwhile O’Keefe had paid a most successful visit to the Saltfleetby site (see E.R. 85, p.55).

The first *palustris* appeared at Saltfleetby on 10th June and the last on 26th. At Gibraltar Point the first appeared on the 9th and the last also on the 26th. Only males were seen although prolonged searches were made in the hopes of finding a female at rest or a pair *in cop*.

This year, 1973, there appeared to be no useful purpose to be served in visiting Saltfleetby where the moth was known to occur in what amounts to abundance in this normally rare species. On 14th June, because it had been named as the site of capture of the first specimen, I made a single visit to Theddlethorpe and a single male appeared as if to vindicate the honour of those two original recorders. I also visited the extremities of Gibraltar Point and was surprised to find how widespread the moth is there. Meanwhile, as if to remind me of the site that started it all, a male *palustris* appeared on 17th June in the trap in my garden.

I have no doubt that *H. palustris* is at present enjoying a period of exceptional plenty in Lincolnshire but it must have always been there, possibly at a low level of population density for anyone who looked assiduously for it. I searched too long in the fens and the wrong sort of habitat. The cause of the periodic fluctuation in numbers of a species is generally complex, but I believe one favourable factor can be found here, the gradual drying out of its habitat. When I first knew Saltfleetby, over fifty years ago, the area was knee-deep in water in winter and ankle-deep throughout the summer. Now in summer one can walk over almost all the area dry shod and much of it remains dry throughout the winter. It was very noticeable how the moth favoured the dry areas and avoided the marshy (but still not water-logged) parts.

It had been hoped to include a note on the larval habitats and the foodplant but this has not been possible. Both Calceby Beck and Swaby Beck marshes have a very rich flora with abundant Meadowsweet, and this is presumably the foodplant. It has been impossible to examine litter from mowing because the bullocks eat the litter as fast as one grows. Nor has it been possible to examine litter at either Gibraltar Point or at Saltfleetby. In these reserves we have a mowing programme carried out as a means of assessing methods of grass land management. A fly-mow has been used which does not provide satisfactory litter. More orthodox mowing with the scythe or Allen scythe has not been permitted until the results of other methods have been assessed. This year I shall, however, be able to mow as I wish and some information may be obtained. A single larva was found, rather late in the year, at Saltfleetby in litter and this larva nibbled with no great enthusiasm at *Rubus caesius* (which I think is the natural foodplant here), *Lycopus europaeus*, a likely alternative, and Meadowsweet. Meadowsweet is virtually absent from Gibraltar Point and cannot be the food plant; there is very little at Saltfleetby and

none near what appears to be the metropolis of the insect there. The larva seemed unlikely to thrive and was released.

Palustris must be widespread in Lincolnshire. It cannot be due to any exceptional insight on my part that I have found it in all the five sites in which I have looked for it since the capture of my first specimen. There are still several coastal areas between Gibraltar Point and Cleethorpes where I would expect it to occur. There are also many inland marshes, notably around Lincoln and Gainsborough, which would, I am sure, repay a visit. I hope it is not being too naive to hope that some collectors at least will see the greater credit to be obtained by taking a series from a hitherto unknown locality rather than from a site bearing the imprints of innumerable moth traps.

A Melanic Larva of *Lasiocampa quercus* L. ssp. *callunae* Palmer in Caithness, Scotland

By BERNARD KETTLEWELL

Black egg and larvae are found regularly only in two areas of Britain, the Lancashire and Cheshire sand-hills (where such melanic larvae always produce black moths referred to as "*olivacea*") and the Yorkshire moors around Ilkley. Here there are two forms of melanic larvae, "black silky" which always produces melanic imagines, and "chocolate" which give rise to a proportion of these as well as *f. typica*. We have demonstrated that this is the result of "crossing-over" which D. R. Lees showed was 8.9 per cent in one brood and 25.6 per cent in another. The inheritance of all melanic forms, both larval and imaginal is recessive.

Though the frequency of the *f. olivacea* phenotype forms up to 70 per cent of the population in Caithness, no melanic larva has been found in the many thousands we have collected until 1972, when my wife found a solitary one at Breamore in which the ground colour was jet black with lateral white markings. There was a deficiency of the longer hairs. It was highly cryptic as it sat on a heather stem in flower bud. In my opinion this larva was different from both the Yorkshire melanic larvae, chocolate and black silky. Unfortunately it died as a pupa just prior to hatching. I have reproduced a colour print of it in *The Evolution of Melanism* (1973, Clarendon Press). A further point of interest is that the Yorkshire, Lancashire and Caithness "*olivacea*" are each controlled by different genes, though phenotypically they appear similar. On the continent such melanism has been found to exist in Denmark, and also in Eastern Germany.

Genetics Unit, Department of Zoology,
University of Oxford.